

**Remarks**

Reconsideration and allowance of the subject patent application are respectfully requested.

Non-elected claims 1-25 and 36-60 have been canceled without prejudice or disclaimer.

The title of the application and abstract have been amended.

Claims 27 and 33 have been amended to correct informalities.

Claim 31 was rejected under 35 U.S.C. Section 112, second paragraph, as allegedly being indefinite. Claim 31 has been amended for consistency with the language of claim 26 and withdrawal of this rejection is respectfully requested.

Claims 26-29, 34 and 35 were rejected under 35 U.S.C. Section 103(a) as allegedly being made "obvious" by Sirbu et al. (U.S. Patent Publication No. 2002/0131458). In addition, claim 30 was rejected as allegedly being made "obvious" by a proposed combination of Sirbu et al. and the Larson et al. article; claim 31 was rejected as allegedly being made "obvious" by a proposed combination of Sirbu et al. and Lipson et al. (U.S. Patent No. 6,567,209); and claim 33 was rejected under 35 U.S.C. Section 103(a) as allegedly being made "obvious" by a proposed combination of Sirbu et al. and Cole et al. (U.S. Patent No. 5,550,373).

There is no rejection of claim 32, which is now written in self-standing independent form.

While not acquiescing in these rejections or in the characterizations of the applied references in the office action, claim 26 has been amended. The discussion below makes reference to amended claim 26.

The tunable cavity resonator of claim 26 includes a moveable membrane disposed in substantially parallel relationship to a substrate and suspended relative thereto at the periphery of the membrane by a support structure. The suspended moveable membrane is of substantially uniform thickness and has an intrinsic stress to permit electrostatic displacement of the membrane over distances for tuning in the infrared band using voltages applied to electrodes. As recited in claim 26, *the intrinsic stress of the membrane is an intrinsic tensile stress adapted to be compensated by a compressive stress applied thereto such that the resultant stress in the membrane is substantially zero or sufficiently low to permit the electrostatic displacement.* This feature finds support in the subject patent application at, for example, page 21, line 1 to page 22,

line 12. This portion of the application describes by way of example and without limitation that the intrinsic tensile stress in membrane 57 may be increased so as to be compensated by the compressive stress in a sacrificial layer 55 so that the resultant stress in the finally released membrane 57 is controlled such that it is close to zero or sufficiently low.

Applicant respectfully submits that Sirbu et al. and the other applied references at least fail to disclose or suggest the above-italicized feature of claim 26.

In the fabrication of a filter device 10, Sirbu et al. simply discloses that a recess 16 is etched in the spacer 17, and then the surface of the supporting structure 18 (comprising the "membrane" 23) is fused to the structured surface of the spacer 17 so as to form a fused interface within a surface region of the spacer 17 outside the recess. See Figure 2 and paragraphs [0031]-[0033] of Sirbu et al. Sirbu et al. fails to address the problems of stress in the resultant membrane and fails disclose or suggest a moveable membrane having an intrinsic tensile stress adapted to be compensated by a compressive stress applied thereto such that the resultant stress in the membrane is substantially zero or sufficiently low as recited in amended claim 26.

Sirbu et al. fails to disclose or suggest at least the above-italicized feature of claim 26 and consequently Sirbu et al. does not make the subject matter of this claim or its dependent claims obvious.

The remaining references cited in the office action are applied in connection with aspects of various claims depending from claim 26. Among other things, these references fail to remedy the deficiencies of Sirbu et al. with respect to claim 26.

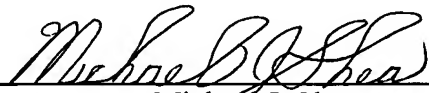
New claim 61 contains the above-italicized feature of claim 26 and therefore likewise patentably distinguishes from the applied references.

FARAONE et al.  
Application No. 10/507,015  
Response to Office Action dated June 19, 2008

The pending claims are believed to be allowable and favorable office action is respectfully requested.

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:   
Michael J. Shea  
Reg. No. 34,725

MJS:dbp  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100